CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER 85-034
NPDES NO. CA0028797

WASTE DISCHARGE REQUIREMENTS FOR:

ADVANCED MICRO DEVICES, INC. (AMD)
SUNNYVALE, SANTA CLARA COUNTY, CALIFORNIA

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) find that:

1. Advanced Micro Devices, Inc. (hereinafter called the discharger) a manufacturer of printed circuits, located on 915 De Guigue Drive, Sunnyvale, by application dated February 13, 1984 has applied for issuance of waste discharge requirements and a permit to discharge waste under the National Discharge Elimination System (NPDES).

2. Studies by the discharger show that groundwater beneath the site has been contaminated by organic solvents such as trichlorethylene (TCE), 1,1,1 trichlorothane (TCA), and trichlorobenzenes. The apparent causes of said contamination were leaks in underground acid neutralizaion systems and underground solvent storage systems, and/or spills in transportation and loading and unloading of solvents.

3. By letter dated October 30, 1984, the discharger submitted a preliminary analytical results for the effluent of the groundwater extraction and cleanup systems (air-stripping and carbon adsorption systems). The result indicated that contaminant concentration have been reduced to levels of 10 ppb for all volatile organic compounds previously detected in on-site monitoring wells. The proposed point of discharge of treated groundwater is to a storm drain tributary to Calabazas Creek.

4. Waste 001 consists of 150,000 gallons per day (gpd) of groundwater extracted as part of the groundwater cleanup program. The discharger has indicated this flow may increase to 432,000 gpd.

5. Waste 002 consists of about 96,000 gallons per day (gpd) of reverse osmosis water purification system wastewater. The discharger indicated this flow may increase to as much as 179,000 gpd.

6. Wastes 001 and 002 are discharged to a stormdrain tributary to Calabazas Creek and South San Francisco Bay.

7. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on July 21, 1982. The Basin Plan contains water quality objectives for the Coyote Creek and South San Francisco Bay and discharge prohibitions.

8. The beneficial uses of Calabazas Creek and South San Francisco Bay are:

- Non-contact water recreation
- Wildlife habitat
- Preservation of rare and endangered species
- Esturine habitat
- Warm fresh water and cold fresh water habitat
- Fish spawning and migration
- Industrial service supply
- Shellfishing
- Navigation
- Open commercial and sport fishing

9. The Basin Plan prohibits discharge of wastewater which has "particular characteristics of concern to beneficial uses" (a) "at any point in San Francisco Bay south of the Dumbarton Bridge" and (b) "at any point where the wastewater does not receive a minimum initial dilution of at least 10:1 or into any nontidal water, deadend slough, similar confined water, or any immediate tributary thereof".

10. The Basin Plan allows for exceptions to the prohibitions referred to in Finding 9 above when it can be demonstrated that a net environmental benefit can be derived as a result of the discharge.

11. Exceptions to the prohibitions referred to in Finding 9 are warranted because the discharge is an integral part of a program to cleanup contaminated groundwater and thereby produce an environmental benefit, and because receiving water concentrations are expected to be below levels that would effect beneficial uses.

12. The Basin Plan prohibits discharge of "all conservative toxic and deleterious substances, above those levels which can be achieved by an program acceptable to the Board, to waters of the Basin". The discharger's groundwater extraction and treatment system and associated operation, maintenance, and monitoring plan constitutes an acceptable control program for minimizing the discharge of toxicants to waters of the State.

13. Effluent limitations of this Order are based on the Basin Plan, State Plans and policies, and best engineering judgment.

14. The issuance of waste discharge requirements for the discharge is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.

15. The Board has notified the discharger and interested agencies and persons of its intent to issue discharge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

16. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, that the discharger in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and the provisions of the Clean Water Act regulations and guidelines adopted thereunder, shall comply with the following:

A. Effluent Limitations

1. The discharge of waste 001 containing constituents in excess of the following limits is prohibited:

Constituent	Units	30-day Average	Daily Maximum
trichloroethylene	mg/l	0.010	0.015
1,1,1 trichlorethane	mg/l	0.010	0.015
trichlorobenzenes	mg/l	0.010	0.015

2. The discharge of Waste 002 containing constituents in excess of the following limits is prohibited:

Constituent	Units	30-day Average
Total Suspended Solids	mg/l	30

3. The pH of the combined discharge of wastes 001 and 002 shall not exceed 8.5, nor be less than 6.5.

4. In any representative set of samples,the discharge of Waste 001 shall meet the following limit of quality:

TOXICITY:

The survival of test fishes in 96-hour bioassays of the effluent as discharged shall be a median of 90% survival and a 90 percentile value of not less than 70% survival.

B. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

a. Floating, suspended, or deposited macroscopic particulate matter or foam;

b. Bottom deposits or aquatic growths;

c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the state in any place within one foot of the water surface:

a.	Dissolved oxygen	5.0 mg/l minimum. The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation.	
c.	pH	The pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH by levels more than 0.5 pH units.	
d.	Un-ionized ammonia (as N)	0.025 mg/l 0.4 mg/l	Annual Median Maxium at any time

3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

C. Provisions

1. The Discharger shall comply with all sections of this Order immediately upon adoption.

2. The discharger shall comply with the self-monitoring program as adopted by the Board and as may be amended by the Executive Officer.

3. This Order includes all items of the attached "Standard Provisions, Reporting Requirements and Definitions" dated April 1977 except A.5, A.12, B.2, B.5, and C.2.

4. This Order expires March 20, 1990 and the discharger must file a Report of Waste Discharge in accordance with Title 23, California Administrative Code, not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

5. This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Water Pollution Control Act, or amendments thereto, and shall take effect at the end of ten days from date of hearing provided the Regional Administrator, U. S. Environmental Protection Agency, has no objections.

I, Roger B. James, Executive Officer do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on April 30, 1985.

ROGER B. JAMES
Executive Officer

Attachments:

Standard Provisions and Reporting
Requirements and Definitions dated April 1977
Self-Monitoring Program

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF MONITORING PROGRAM
FOR

ADVANCED MICRO DEVICES

SUNNYVALE, SANTA CLARA COUNTY

NPDES NO. CA 0028797

ORDER NO. 85-034

CONSISTS OF

PART B

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT

Station	Description
A-1	At a point in the groundwater collection system immediately prior to treatment.

B. EFFLUENT

Station	Description
E-1	At any point in the outfall from the groundwater treatment system where treated groundwater is present and prior to mixing with water purification systems wastewater.
E-2	At any point in the outfall from the water purification system prior to mixing with treated groundwater.
E-3	At any point in the outfall where all waste from the groundwater treatment and water purification system are present and prior to mixing with stormwater.

C. RECEIVING WATERS

Station	Description
C-1	At a point in Sunnyvale East Channel at least 100 yards but not more than 200 yards downstream from the point of discharge.

II. SCHEDULE OF SAMPLING AND ANALYSIS

The schedule of sampling and analysis shall be that given as Table I.

I, Roger B. James, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 85-034.

2. Is effective on the date shown below.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer.

ROGER B. JAMES
Executive Officer

Effective Date_____

TABLE 1

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	A-1	E-1	E-2	E-3	C-1								
TYPE OF SAMPLE	G	G	G	G	G								
Flow Rate (mgd)	D	D	D										
BOD, 5-day, 20°C or COD (mg/l & kg/day)													
Chlorine Residual & Dosage (mg/l & kg/day)			W										
Settleable Matter (ml/l-hr. & cu. ft./day)			(1) M/Q										
Total Suspended Matter (mg/l & kg/day)													
Oil and Grease (mg/l & kg/day)													
Coliform (Total) (MPN/100 ml) per req't													
Fish Tox'y 96-hr. TL % Surv'l in undiluted waste													
Ammonia Nitrogen (mg/l & kg/day)													
Nitrate Nitrogen (mg/l & kg/day)													
Nitrite Nitrogen (mg/l & kg/day)													
Total Organic Nitrogen (mg/l & kg/day)													
Total Phosphate (mg/l & kg/day)													
Turbidity (Jackson Turbidity Units)													
pH (units)				M									
Dissolved Oxygen (mg/l and % Saturation)													
Temperature (°C)				Q									
Apparent Color (color units)													
Secchi Disc (inches)													
Sulfides (if DO<5.0 mg/l) Total & Dissolved (mg/l)													
Arsenic (mg/l & kg/day)													
Cadmium (mg/l & kg/day)													
Chromium, Total (mg/l & kg/day)													
Copper (mg/l & kg/day)													
Cyanide (mg/l & kg/day)													
Silver (mg/l & kg/day)													
Lead (mg/l & kg/day)													

TABLE 1(continued)

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	A-1	E-1	E-2	E-3	C-1								
TYPE OF SAMPLE	O	G	G	G									
Mercury (mg/l & kg/day)													
Nickel (mg/l & kg/day)													
Zinc (mg/l & kg/day)													
Phenolic Compounds (mg/l & kg/day)			Q										
All Applicable Standard Observations			Q										
Bottom Sediment Analyses and Observations													
Total Dissolved Solids (mg/l & kg/day				M									
Trichloroethylene (mg/l)		2/M			M								
Tran-1,2 Dichloroethylene (mg/l)		2/M			M								
1,1,1, Trichloroethane (mg/l)		2/M			M								
Monocyclic Compounds (2) (mg/l)		Q			Q								
GC/MS Scan (BNA and VOA) (mg/l)		Q			Q								

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample
O = observation

FREQUENCY OF SAMPLING

Y = once each year
Q = once each calendar quarter
M = once each month
W = once each week
D = once each day
3/W = three times each week

Footnotes:

(1) Monthly for 3 months from the date of permit adoption, the quarterly thereafer; samples should be taken during the time that multi media filter is being backwashed.

(2) Sum of monocyclic compounds including 1, 2 dichlorobenzene, ethylbenzene, trichlorobenzene, and xylene.